

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte THOMAS ACQUAVIVA and PAUL W. MOREHOUSE, JR.

Appeal No. 1997-1425
Application No. 08/520,228

ON BRIEF

Before THOMAS, HAIRSTON, and HECKER, Administrative Patent Judges.

HECKER, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 24 through 33, all claims pending in this application.

The invention relates to an electrophotographic printing machine that optimizes the quality of an image produced on a substrate (e.g. paper) by modifying the

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machine's operating parameters in response to the substrate's surface roughness and to its thickness.

Representative independent claim 33 is reproduced as follows:

33. A method of marking a substrate, comprising:
- (a) moving a substrate from a substrate holder to a catch tray;
 - (b) recording a latent image on a photoconductive surface;
 - (c) developing the latent image with toner;
 - (d) transferring the developed toner from the latent image to the substrate;
 - (e) fusing the transferred toner layer on the substrate;
 - (f) generating a roughness signal as a function of the substrate roughness;
 - (g) generating a thickness signal as a function of the substrate thickness;
 - (h) producing a process control signal as a function of the roughness signal and the thickness signal[.];
 - (j) controlling at least one of the steps of (c), (d), and (e) as a function of the process control signal.

The Examiner relies on the following references:

Jakeman et al.	3,971,956	Jul. 27, 1976
Wong et al.	5,138,178	Aug. 11, 1992

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Courtney et al.	5,139,339	Aug. 18, 1992
Oshida ¹	JP 5-229219	Sep. 7, 1993

Claims 24 through 33 stand rejected under 35 U.S.C. § 103 as being unpatentable over Oshida in view of Wong in further view of Courtney and Jakeman.

Rather than reiterate the arguments of Appellants and the Examiner, reference is made to the brief and answer for the respective details thereof.

OPINION

After a careful review of the evidence before us, we will not sustain the rejection of claims 24 through 33 under 35 U.S.C. § 103.

The Examiner has failed to set forth a ***prima facie*** case. It is the burden of the Examiner to establish why one having ordinary skill in the art would have been led to the claimed invention by the reasonable teachings or suggestions found in the prior art, or by a reasonable inference to the artisan contained in such teachings or suggestions. ***In re Sernaker***, 702 F.2d 989, 995, 217 USPQ 1, 6 (Fed. Cir. 1983).

¹ For this reference we have relied upon a translation obtained by the PTO in July, 1996, a copy of which is included in the application file.

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"Additionally, when determining obviousness, the claimed invention should be considered as a whole; there is no legally recognizable 'heart' of the invention." ***Para-Ordinance Mfg. v. SGS Importers Int'l, Inc.***, 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995) (***citing W. L. Gore & Assocs., Inc. v. Garlock, Inc.***, 721 F.2d 1540, 1548, 220 USPQ 303, 309 (Fed. Cir. 1983), ***cert. denied***, 469 U.S. 851 (1984)).

The Examiner's rejection reasons that Oshida teaches the adjustment of any aspect of a recording machine based on the kind of material used such as the thickness and roughness of paper. However, since Oshida lacks the detectors for these parameters and is a different type of recording machine (i.e., heat transfer recording), the Examiner cites Wong for using a thickness detecting device in a photocopier recording machine. The Examiner then cites Courtney for controlling a photocopier wherein a light source is used to detect specular and diffused reflections. The Examiner concludes that specular and diffused reflections as used in Jakeman can detect surface roughness (Final Rejection-page 4). "Therefore, because these detection devices and controllers were art-recognized

equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute the detection devices of the other references in combination for Oshida['s] generic teaching of detecting the paper thickness and roughness." (Final Rejection-page 5).

Appellants argue that Oshida does not include any sensors of any type (brief-page 6). The Examiner responds that obviously or inherently detectors must be used in Oshida to determine the characteristics of thickness and roughness of a piece of paper (answer-page 3).

If the prior art reference does not expressly set forth a particular element of the claim, that reference still may anticipate if that element is "inherent" in its disclosure. To establish inherency, the extrinsic evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill."

Continental Can Co. v. Monsanto Co. 948 F.2d 1264, 1268, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991). "Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of

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circumstances is not sufficient." *Id.* at 1269, 20 USPQ2d at 1749 (quoting *In re Oelrich*, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981)).

Since Appellants and the Examiner agree that Oshida does not disclose thickness and/or roughness detectors, we have thoroughly reviewed Oshida for an inherent teaching of such. Looking at the abstract, under PURPOSE, we discern that clear transferring (i.e., printing) requires a proper transfer pressure which can be affected by differences in material such as thickness and roughness of paper. Under CONSTITUTION in the abstract we read that an angular detection encoder varies the transfer pressure. "As a result, the transfer pressure can be variably adjusted in accordance with the kinds of material to be transferred... resulting in allowing to perform clear transferring by proper transfer pressure." At page 6 of the translation Oshida states "The transfer pressure can be adjusted by the pressure given to the coil spring which is operated based on the signal count per minute generated by the detected angle encoder." And at page 9 of the translation it states "Therefore, a clear image can be obtained at a specific

transfer pressure regardless of the changes in various factors (e.g., paper thickness, surface roughness, type of thermal transfer recording material, etc.)."

Our reading of Oshida indicates that variable adjustment of pressure will compensate for all types of variations in paper, such as thickness, surface roughness, type of thermal transfer recording material, etc. Thus, we conclude that Oshida neither teaches thickness and/or roughness detectors, nor are such detectors inherent therein. Oshida's pressure adjustment, based on angle detection, inherently compensates for such variations as thickness, roughness, etc., but does not detect these parameters per se.

Wong meets the claimed requirements of thickness detection; this is admitted by Appellants at the bottom of page 3 in their specification. However, and we agree, Appellants argue the combination of references does not teach both thickness and roughness detectors. Although Courtney uses optical detectors to detect diffuse and specular reflectivity, these detectors are used to discriminate between paper and a transparency, not surface roughness (column 1, lines 5-7). Jakeman does detect surface roughness, but this

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is in the context of sheet steel, the sea, land masses, etc. (column 6, lines 34-41). We see no rational, nor has the Examiner suggested, why one would associate Jakeman with an electrophotographic printing machine.

The Federal Circuit states that "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." ***In re Fritch***, 972 F.2d 1260, 1266 n.14, 23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992), ***citing In re Gordon***, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). "Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor." ***Para-Ordnance Mfg. v. SGS Importers Int'l***, 73 F.3d at 1087, 37 USPQ2d at 1239, ***citing W. L. Gore & Assocs., Inc. v. Garlock, Inc.***, 721 F.2d at 1551, 1553, 220 USPQ at 311, 312-13.

As pointed out above, Oshida does not disclose or suggest, inherently or otherwise, the use of a surface roughness detector in any type of recording device. Wong, Courtney and/or Jakeman do not fill this void. Since there is

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no evidence in the record that the prior art suggested a detector for surface roughness in a recording device, and all claims require such, we will not sustain the Examiner's rejection of claims 24 through 33.

We have not sustained the rejection of claims 24 through 33 under 35 U.S.C. § 103. Accordingly, the Examiner's decision is reversed.

REVERSED

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JAMES D. THOMAS)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
KENNETH W. HAIRSTON)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
)	
)	
)	
STUART N. HECKER)	
Administrative Patent Judge)	

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RONALD ZIBELLI
XEROX CORPORATION
XEROX SQUARE 020
ROCHERSTER NY 14644

Leticia

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APJ HECKER

APJ HAIRSTON

APJ THOMAS

DECISION: REVERSED

Send Reference(s): Yes No
or Translation (s)

Panel Change: Yes No

Index Sheet-2901 Rejection(s):

Prepared: June 4, 2001

Draft Final

3 MEM. CONF. Y N

OB/HD GAU

PALM / ACTS 2 / BOOK

DISK (FOIA) / REPORT